

REMARKS/ARGUMENTS

Favorable reconsideration of this application in light of the following discussion is respectfully requested.

Claims 1-14 are pending in the present application. Claims 1-14 have been amended; and Claims 15-28 have been added by the present amendment. The claims are only amended to correct minor informalities; the claim amendments are not believed to raise any new issues or narrow the claims in any aspect.

In the outstanding Office Action, Claims 1-14 were rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent 6,201,917 to Campion et al. ("Campion") in view of U.S. Patent 4,691,991 to Unger and U.S. Patent 5,995,695 to Aikawa et al. ("Aikawa"). This rejection is respectfully traversed.

Independent Claim 1 is directed to a single mode optical fiber having a light-conductive core portion, an internal cladding portion surrounding the core portion, and a jacketing portion surrounding the internal cladding portion. The refractive index of the core portion is greater than the refractive indices of the cladding and jacketing portions, which are practically equal. The internal cladding portion consists of SiO₂ doped with fluorine within a range of 0.1-8.5 wt.%, and the core portion is subjected to a compressive axial stress over its full cross-section. Independent Claim 8 is directed to a method of manufacturing a single mode optical fiber having similar features.

To establish a *prima facie* case of obviousness under § 103(a), the following three basic criteria must be met: (1) there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill of the art, to modify the reference or to combine reference teachings; (2) there must be a reasonable expectation of success; and (3) the prior art reference (or references when combined) must teach or suggest all the claim limitations (MPEP § 2143).

With respect to the third criteria, Applicants respectfully submit that none of the three applied references teach or suggest the refractive index profile of the fiber claimed in independent Claims 1 and 8. More particularly, the references do not teach or suggest a fiber in which (1) the refractive index of the core is greater than the refractive indices of the cladding and jacketing portions, and in which (2) the refractive indices of the cladding and jacketing portions are practically equal. For the purpose of discussing the applied art, Applicants hereinafter refer to the core, cladding, and jacket portions as the core, inner layer, and outer layer, respectively. Thus, Claim 1 comparatively recites a core having a refractive index greater than the refractive indices of an inner and outer layer, which are practically equal.

The outstanding Office Action cites only Unger as disclosing the refractive index profile of Applicants' claimed fiber (Office Action, July 8, 2003, page 2-3). More particularly, the Office Action states that Design No. 1, of Table 1 (col 6., lines 25-40), discloses "index diff. %" values showing (1) a core 12 with a refractive index n_{co} greater than the refractive index $n_{cl}=1.45$ of the outer layer (threshold cladding) 18, and (2) an inner layer (inner cladding) 14 having a refractive index $n_w=1.444$ that is "practically equal" to the refractive index $n_{cl}=1.45$ of the outer layer 18 (Office Action July 8, 2003, page 3).

Applicants respectfully submit that the refractive indices of 1.444 and 1.45 are not considered practically equal within the art, because the 0.4% difference would have a strong influence on the properties of an optical fiber. In this regard, Applicants direct the Examiner to Charts 1 and 3 of Aikawa, wherein the refractive index differences (Δ^- and Δ^+) of -0.10%, -0.20%, and -0.35% result in significantly varied dispersion slopes of +0.05, -0.04, and -0.49, respectively (col. 12, lines 40-60; col. 13, lines 10-30). Applicants further direct the Examiner to European Patent Application EP 1076250 A1 (Attachment 1), attached hereto, which explains that a refractive index difference as small as 0.30% can cause difficulties in

increasing the effective area A_{eff} of an optical fiber (page 5, para. 57). Thus, within the art, a refractive index difference of 0.4% does not suggest that two compounds have refractive indices that are practically equal.

Accordingly, because the refractive indices of the inner layer 14 and outer layer 18 disclosed in Unger are not considered practically equal within the art, it is respectfully requested this rejection be withdrawn.


In addition to the arguments set forth above, and with respect to the first criteria for *prima facie* obviousness, Applicants further submit that neither Unger nor Campion suggest that these references should be combined. The object of Unger is to provide an improved WT fiber having little dispersion over a wide spectral range (col. 3, lines 11-13). The object of Campion is to provide an optical fiber that is almost impermeable to hydrogen (col. 2, lines 25-29). Campion seeks to achieve this objective by forming part of a fiber under compression (col. 3, lines 23-33), while Unger is entirely silent regarding the use of compression to prevent structural defects. Thus, there is no motivation to combine Unger and Campion. Accordingly, it is respectfully requested this rejection be withdrawn.

New Claims 15-28 set forth the subject matter of Claims 1-14, but further recite that the attenuation loss of the fibre is less than 0.25 dB/km at 1550 nm (see page 3, lines 20-24, for 35 U.S.C. § 112, second paragraph, support). Accordingly, Applicants respectfully submit that Claims 15-28 are allowable for the same reasons Claims 1-14 are allowable.

Consequently, in light of the above discussion, the present application is believed to be in condition for allowance, and an early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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